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Logan

FEEDING POLLEN SUPPLEMENT AND POLLEN SUBSTITUTE TO HONEYBEES

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Bees must have pollen as a source of protein in their diet and for feeding their larvae. When supplied with a food material containing pollen, or a satisfactory substitute, bees will commence brood rearing sooner in the spring, and in larger amounts than if they depended only upon their stored reserves of pollen.

A method of supplying this food material has been developed in Minnesota and Wisconsin. Preliminary work in Logan, Utah, indicated that many Utah beekeepers may find this method useful when they plan to build up strong colonies to be divided for increase, or when strong colonies are required for orchard pollination. In an area deficient in early pollen sources, colonies will be aided by a supplementary food supply during the spring period of rapid brood-nest expansion. Newly established package colonies and weak colonies also benefit from this assistance.

Two types of food material may be offered to the bees— (1) pollen supplement, which is pollen augmented by some other food material, and (2) pollen substitute, used when pollen is not available.

PREPARATION OF POLLEN SUPPLEMENT

For feeding pollen supplement a supply of pollen must be available, which should have been collected during the previous year. This is usually done by placing a pollen trap at the entrance of a colony. This trap compels the bees to enter through 5-mesh hardware cloth, which scrapes the pollen pellets from their legs. A shallow tray underneath collects these pellets as they fall. This pollen should be collected every few days, dried, and stored in a tightly closed metal or glass container. Some beekeepers have devised methods of removing stored pollen from combs for use with supplemental food materials, but in general trapping is easier and more satisfactory.

For supplementary material, soybean flour prepared by the expeller process is used in the proportion of 3 parts to 1 part of pollen. About 1 pound of dry pollen is soaked for several hours in 1 quart of hot water or a sirup made with 2 parts of sugar to 1 part of water. Then the soybean flour is added to this suspension and mixed with more sugar sirup to a loose dough-like paste, or candy, which should be firm enough not to run down between the tops of the frames. About 1 pound of this paste is made into a pollen cake. This cake is spread on a sheet of waxed paper and

Fig. 2. Three steps in placing the pollen cake over the cluster.

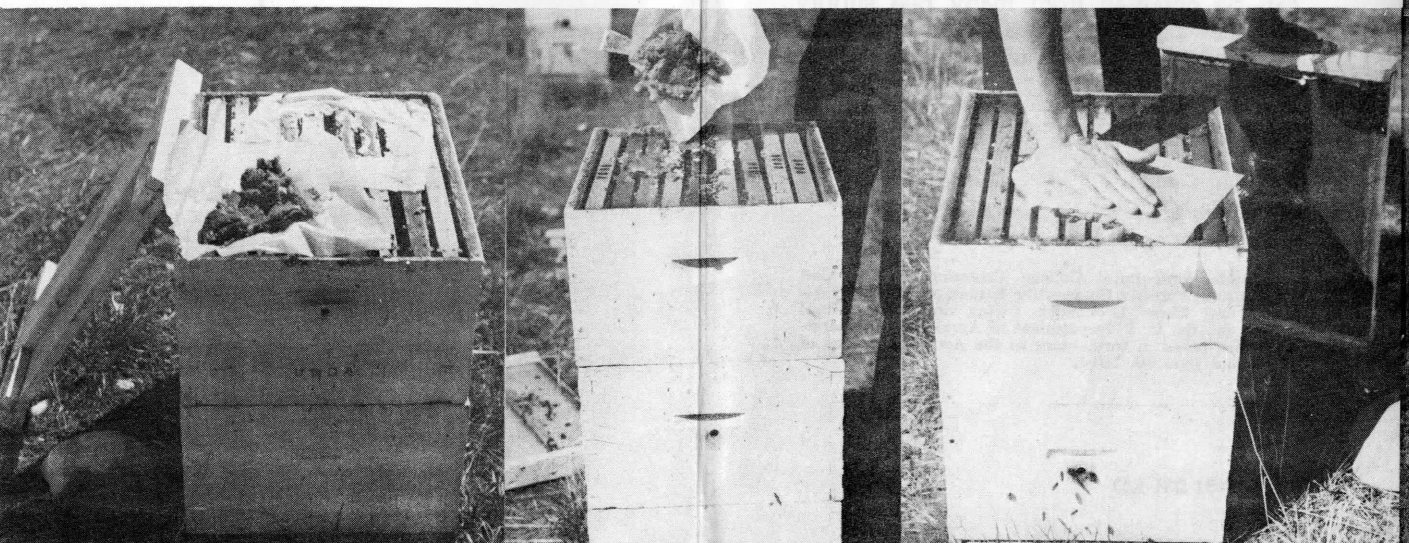
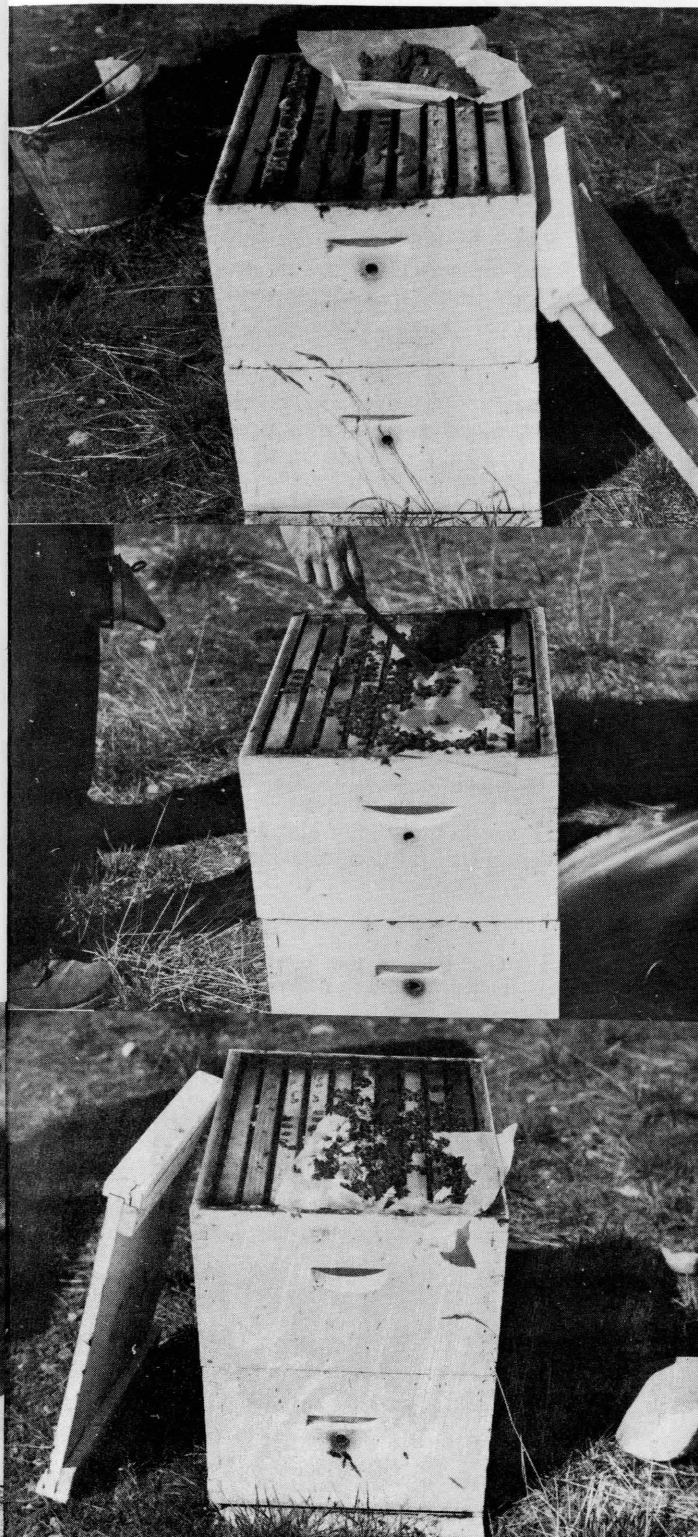


Fig. 3. Stages in consumption of the pollen cake by the colony.



pressed down over the top of those frames occupied by the cluster, with the paper on top of the cake. Waxed paper prevents drying out, and should always be used to cover the material. The pollen cake should be replenished before it is entirely consumed, usually every week or ten days.

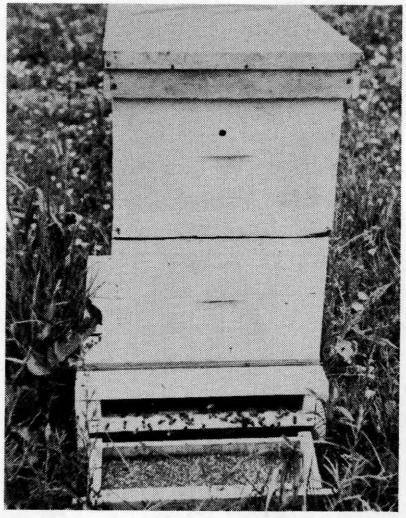
PREPARATION OF POLLEN SUBSTITUTE

When pollen is not readily available, a complete substitute can be prepared from soybean flour and either dried brewers' yeast or skim-milk powder. Dried brewers' yeast is better for extended feeding but is more expensive. A yeast intended for animal consumption is cheaper than medicinal yeast. Skim milk powder is quite satisfactory for periods up to three weeks, but no longer.

Brewers' yeast should be used in the proportion of 1 part (by weight) to 6 parts of soybean flour and skim milk at 1 part to 4 parts of soybean flour. These dry materials should be mixed thoroughly, and then sugar sirup (2 parts of sugar to 1 part of hot water by volume) added at the rate of approximately 1 quart to 1 pound of dry material. This loose, dough-like paste should be allowed to remain overnight before it is used, to allow moisture to penetrate all the dry particles.

This substitute may also be offered dry, i.e., without addition of sugar sirup, in a shallow tray located in a sunny sheltered spot in the apiary. The moist paste is more satisfactory, however, and can be offered late in the winter long before the bees are able to fly out to collect dry material. The paste should be distributed in the manner described for pollen supplement.

Fig. 1. **One type of trap used to secure fresh pollen utilized in pollen supplement.**



FEEDING

For best results, the feeding of pollen substitute or supplement should be started about March 1, or at least 4 to 6 weeks before pollen is available on the field. It may be continued as long as the bees will take it, or until an abundant supply of pollen is available. Once started, such feeding should not be interrupted, lest it cause a setback in brood rearing. **Precautions must be taken to insure that bees fed pollen supplement will have a plentiful supply of honey. If honey stores are low or lacking, sugar sirup should be fed also.**

The feeding of pollen substitute or supplement should produce strong colonies of young bees. If these colonies are not used in orchards or divided for increase, they should be watched closely for swarming symptons and supplied with plenty of room. Beekeepers must keep in mind that when preliminary honey flows do not materialize before the main flow occurs, strong colonies without a good reserve of honey are in danger of starving.

WHERE TO OBTAIN MATERIALS

The materials mentioned in this circular can be obtained from many bee supply dealers. Local milk dealers, bakers, feed dealers, and druggists may be able to provide some materials.

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